

# Home Computing WEEKLY

Jim Kaye Home Computing

Britain's leading  
weekly magazine  
for software  
reviewers

NO. 54  
MARCH 20-26, 1984

40p

**WIN**  
Spectrum  
and ZX81  
software from  
**SILVER  
SOFT**  
In our free £1000  
competition

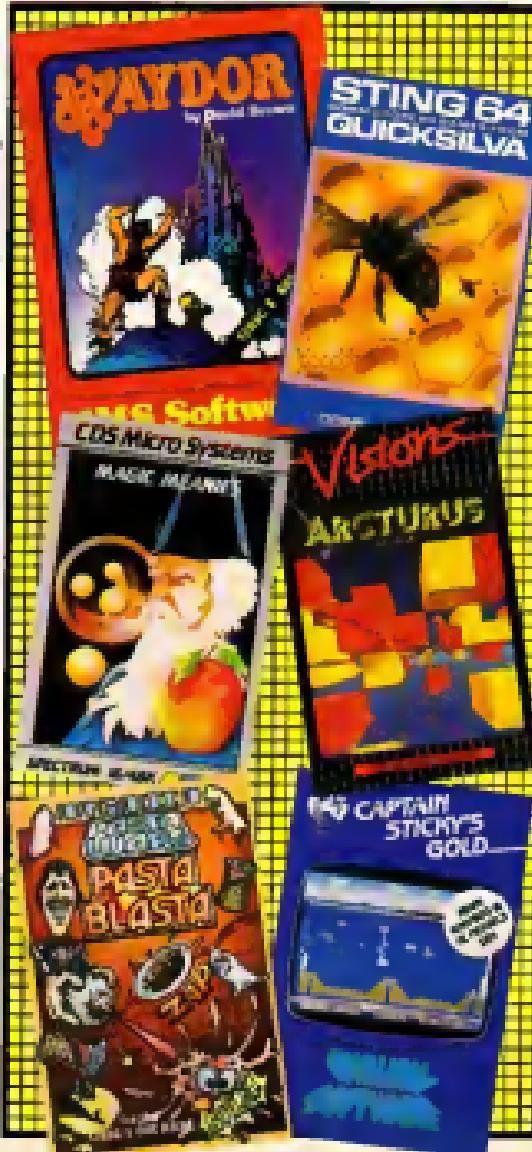
Software  
reviews for:  
Commodore 64,  
Spectrum, BBC,  
VIC-20, Texas,  
Atari, Dragon  
and Oric

Three great Oric  
games to type in

Two Spectrum  
programs to play

**PLUS**  
programs to  
type in for VIC-20,  
Commodore 64  
and Atari

**AND**  
charts, news,  
your letters...



## Software price rise causes stir

Imagine has caused two stir in  
the software industry — first by  
slashing prices and now raising  
them.

All its present prices, including  
the less sellers like James  
Buckley and Wally Wilson,  
have gone up by £1.25 to  
£1.75 each cartridge.

Imagine's new two cartridge  
groups, 'Commodore' (C64 and  
VIC-20) and 'BBC', will also raise in  
£1.25.

The future releases will cost  
more than £1.75.

Imagine spokesman director  
Steve Evans said: 'They are  
going to be expensive and weighty.  
We know what the kids  
want. They tell us what they don't  
want.'

The first two of the new  
higher prices will be valid  
Comment on page 7

## Nine tracks for speed

Disk speed for half the price is  
claimed for a new data storage  
system using cartridges with  
128 bytes of tape.

Called Pronto, it is designed  
to appeal to home computer  
users who cannot afford disk  
systems.

Mike Jones, managing  
director of producer The Meg  
Systems, said: 'There is such a  
huge gap between the slow  
speed tape recorders and the  
1000- or 3000-pes would have to be  
Comment on page 7

*On a hostile planet deep in space  
an earth patrol is marooned.  
Only one person can save it.*



# TROOPATRUCK

**The galaxy's most lovable  
battle wagon.**

Kassan Heelporters from the back. LavaBirches Tanks in front. HellChoppers from above.

3. Inevitably, tensions between the two have become a dangerous fight for survival.

Now as Troope Truck travels and keeps across Earth's surface, only one person in the galaxy can save it.

10

The budget is £200-£300 (1992 inc. VAT), and the journey starts at Books WH Smith, Knumbecks, or any intergalactic computer games shop. Your Commodore 64 will thank it to bits.



RABBIT SOFTWARE LTD

Brilliant on Spectrum, VIC-20 & C64

## BUY THIS SPACE

To advertise  
your latest product  
Ring Clares or Barry on  
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## Briefly

Advertisers can be used on the following pages. A free 100-page position guidebook from *PCW* costs £2.95 and the complete range of free leaflets detailing the latest software and hardware is available from *PCW* Systems, 10 Main Street, Derby DE1 1PF.

Sir Clive Sinclair has signed a deal allowing assembly and distribution of Spectrum and ZX81s in South Korea. Sinclair Research will supply components to Samsung Electronics and the two partners are expected to make their own.

Sir Clive Sinclair, Chairman, Sinclair Research, Camberley, Surrey

■ ■ ■  
A new user-oriented magazine for owners of the ZX81, edited by the co-creator of *Which? Magazine*, Colin Barker. Subscription is £12 a year and the publication plans to encourage newsgroups to be set up.

Colin Barker, Computer Horizons, 20 Orange St, London WC1N 1ED

■ ■ ■  
Acorn has bought 100 pages on Microsoft 800 to provide subscribers with information on its products, prices and personnel.

Microsoft 800, Totem, 195 Finsbury Rd, London EC1M 5AD

■ ■ ■  
Four educational games in the European languages are on a new program marketed by Softshop for the Commodore 64, BBC Spectrum and Oric/Amstrad. Four Games for Children covers addition, subtraction, spelling, numbers and the alphabet and costs £12.95. Softshop International, Unit 20, 16 Bruce St, London E1 7DU

■ ■ ■  
Your Commodore 64 can hold a conversation and even write programs for you, according to *Converser*, which has just published *Advanced Converser* for the Commodore 64. The book costs £26.95 and was written by former *Amstrad User* team Keith and Shirley Bellis. *Converser*, 12/13 Little Newgate St, London WC2R 1LD

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Paul Lister	Chris Potts
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SILVER  
SOFT  
COMPETITION  
Up to  
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vouchers  
CAN BE USED FOR  
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# SILVER SOFT

Find the words and you could win a share of £1,000-worth of great Silversoft games in this week's competition.



Programs for all these computers are in this week's issue.

**The Quill**

48K Spectrum



£14.95

The Quill is a major new utility written in machine code which allows even the novice programmer to produce high-speed machine code adventures of superior quality to many available at the moment without any knowledge of machine code whatsoever.

Using a menu selection system you may create well over 200 locations, describe them and connect routes between them. You may then fill them with objects and problems of your choice. Having tested your adventure you may alter and experiment with any section with the greatest of ease.

A portmanteau adventure may be saved to tape for later compilation. When you have done so The Quill will allow you to produce a copy of your adventure which will run independently of the main Quill editor, so that you may give copies away to your friends. The Quill is provided with a detailed tutorial manual which covers every aspect of its use in writing adventures.

**From The Golden Nib Of  
The Quill  
Comes a Gourmet Feast  
for  
Hungry Adventurers  
Volume 1  
of the  
GOLD COLLECTION**

**Magic Castle**

Join the Princess from the Magic Castle for journeys of mystery and rocky trails.

**Swing Bridge**

Cross the balance beam  
over the river, but when  
you have done, you will

**Swallow**

Can you handle such moments over  
such a flight to the sky over many  
deserts?

**Whalewater**

Only the ones who have the  
boldness can cross the  
waters, the mighty waves of the  
Whalewater.

**Death's Throat**

Only those who have the  
courage to cross the bottom of  
the ocean can win the  
treasure of the Death's Throat.

**Desert Trail**

Only the ones who have the  
courage to cross the bottom of the  
desert can win the treasure of the  
Death's Throat.

A seventh selection of adventures for the 48K Spectrum written with the Quill.

From the farfetched imaginations of many authors, we have selected this line of some of the best ones for inclusion. Each adventure is written in Quill and is presented in the distinctive layout of the series to give you an immediate feel for what they have to offer.

The adventures are priced at only £7.95 each.

Selected titles available from your computer store or mail order supplier including:

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Or direct from us by post or telephone

SAE for full details of our range.

Dealer enquires welcome

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courage to cross the bottom of the  
desert can win the treasure of the  
Death's Throat.

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Postcode Required by 28th March  
or 1222 41391 Ext 436

**GILSOFT**

10 Newthorn Road

Barry

Rhondda Glamorgan

CF6 8LE

Tel: 01446 732765

## Price rise

From *Joan Price*

Bandstand and Cyclone, for the Spectrum and the Commodore 64.

Although still on cassette, they will be bound along with other items, like maps and detailed pricing instructions.

Mr Evans and Langue believe software sold as cassette discs had reached its limit and more new titles to be offered in cassettes.

A by-product is that piracy would be inevitably because the other items in the boxes would be essential to use the games.

Mr Evans and Langue had also developed a system making its products nearly impossible to copy.

He agreed that the price cuts were to clear the decks and that, at £3.99, the software was a bargain.

The company did not know exactly how much the future releases — due out in about three months — would cost, but it was spending £50,000 on marketing.

Vegan Games' boss Mark Alderson, who is also chairman of the Guild of Software Houses, said when he heard the news: "I don't understand at all. What's the logic behind that?"

"We really sensed and sensed by Langue's pricing and marketing. First they drop their prices and the next moment they are raising them too high."

"When I appraised them more away from lower prices, I think they have over-reacted in the opposite direction. They will find it very hard, no matter what the reason, to sell games at £1.99."

Rod Consens, managing director of Quicksilver, said his company did not plan to move from its pricing policy which puts a Spectrum game at £2.99.

The company would be prepared to offer games like its Cyclone, Design and Cyclone, a trademark for the Commodore 64.

Billy Simpson, head of PCS Distribution, believes the prices will be about £1.99 and £3.99. He said: "Imagine we are clearing these programs, no computer necessary. If that's the case it's a revolution and good for the industry."

He said they would have to offer at least the value of the game from Phoenix Software, when an arcade game and an adventure are boxed in a video-cassette case for £3.99.

*Answers, 1 Sir Thomas St, Liverpool L1 6AB*

## Nine tracks

From *Joan Price*

pay for the cheapen floppy disk system."

Phoenix uses 5 1/4 and the machine, which runs up to eight drives, is £299.99. Tape cartridges cost £12.99-£19.99 depending on quantity.

Up to 100KB can be stored,

says Phoenix, and accessed in three to four seconds. Transfer rate is 100K per second, around 200 times faster than cassette.

At present the system works only on the BBC computer, but Phoenix plans to make it available for other popular home games.

Phoenix says the speed and reliability are due to a nine-track recording head — recording one byte across the quarter-inch width of the tape — and an error-checking system controlled by an on-board processor.

Phoenix has an own BBC Policy Agency, using the standard BBC filing system, BBC3 commands and its own commands, prefixed by an asterisk.

The maximum length of tape at a drive is 15 inches per track and, says Phoenix, coaches the cartridge will only occasionally, so tape lubricant is not needed.

Programs on text files from cassette can be transferred.

Mr Lucas said his company was talking to software companies about porting software on the new cartridge.

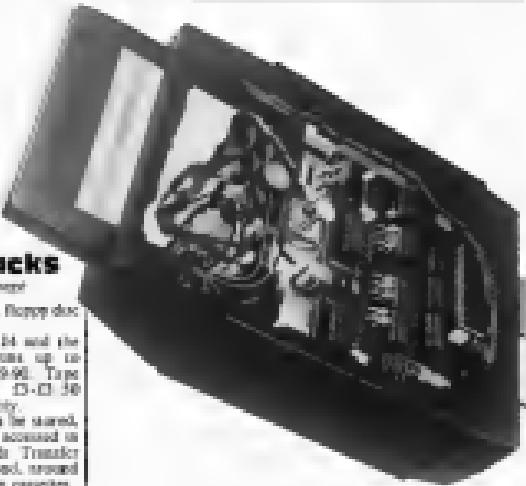
Using the system, Phoenix says, means plug-in was other sockets and costing two readers.

Once installed, the Phoenix system plugs into the BBC's disc port and a second plug goes into the power output socket.

Phoenix says the maximum should not take more than 20 minutes.

The company says that, with production under way at its Phoenix plant, initial orders will start within two months.

*Phoenix Systems, Telephone Answered Direct, Phoenix, Chelmsford CM2 1AY*



Close-up view of the Phoenix system shows the 120 tape loop and, in rear, the error-checking processor.

# You could be on our pages

We welcome programs, articles and tips from our readers.

**PROGRAMS** must always be sent on cassette. Listings are helpful, but not necessary. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

**ARTICLES** on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in *HOME*. Articles must ideally be submitted with help our readers make better use of their machines by giving useful ideas, possibly with programming examples. We will convert any sketches illustrations into finished artwork.

**TIPS** are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

Commission rates are paid.

Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.

**Paul Liperton, Home Computing Weekly, No. 1 Golden Square, London W1P 1AU**

## Colour coded

For Sir Wily, Matthew Smith's follow-up to the chart-topping Music Mania, now only a colour tape, found in the index card, is input by the player.

Software Projects says the is a bid on lower prices. For Sir Wily, which has a competition delayed on the lines, was originally due out in December.

It runs on the 16K Spectrum along with the company's other new games, Trickle Thrush and Oliver Dandy Dog, for the Commodore 64, plus a tape while feeding.

Software Projects, Box 8500, Cimex Ltd, Alberta Rd, Woodside, Liverpool L13 7SF.

The annual meeting of the Society of Software Authors, arranged by the Computer Trade Association, will be held at the Studio Theatre, Kennington More, Theatre, Oldfield Rd, Brixton, on May 11, starting at 1pm. Subscriptions £10 per year.

Conor Cox, general manager, Society of Software Authors, 7 Montague Ct, Whitchurch Lane, South, Bognor Regis, Sussex.

\*\*\*\*

Tube, an extended BASIC for the Commodore 64 at £14.95, is used to offer 40 instructions to make the computer easier to use.

Attn: 18 Gregory Square Ln, Maryland, MD 20714 USA.

Logo, the sophisticated programming language, has been brought out for the Spectrum by Kamei and for the Amstrad by Soscon. Version 1.0 is on tape for £9.95 and Amstrad's is on cassette at £9.95. Both are archetected two 300-page manuals.

Attn: Unit 12, Warrington Rd, Macclesfield, Cheshire, SK10 2JW.

Alert, Fantasy Tres, Stockport, SK10 2JZ.

Logosonic is adding two books to its series on using Apple computers. The BBC Micro Guide and, the one in three weeks, The Electron Micro Guide. Both are by Graham Blackwell, director of the by-the-edge Educational Computing Project, South Devon, and cost £1.95.

Logosonic, Suite 100, 10th Floor, 20000 Charing Cross Rd, London, SW1.

Northwards Software is planning to bring out a magazine on tape for users of the TI-99/4A in May/June. Northwards Software, 12a Stour St, Chichester, West Sussex, BN15 2QE.

Portuguese chess Maratán, April 28, Alexandra Palace, North London. 3rd Annual Computer Computer Show, June 10, National London University Central International, Northolt, Hounslow, Middlesex. Personal Computer Games Fair Show, April 20-21, Savillant Conference Centre, Queen's Rd, Goldhill; West Mercia Dr Bernardo Show, May 14-15, Battersea Pk, London.

Vegan Games' Bob Alexander has just returned from Hungary where he had talks with Audiomatics, the software house that produced Chinese Checkers, about importing new games. Price: £3.95. Portobello Rd, London W11 1JZ.

After the press of the book, the book of the game of the book. Melville House has brought out A Castle in Playing. The Hobbit, Price £12.95, a detailed strategy and tactics and some, but not all, solutions. Melville House also publish the game tape for the 16K Spectrum, Commodore 64, C64 and BBC.

Melville House, Castle Court, Worcester, Castle Yard, Worcester, WR1 2JZ.

## TI-994A SOFTWARE

Two disk drives for the unexpanded TI-994A.

### PILOT

A game for flight simulation gives the user plenty of options for take-off and landing, cockpit display of heading, time, distance, fuel, instrument panel and more. Includes cassette and tape.

### TRITON

Police 1000 version Beta includes 3 disk levels, graphics, numbers display, a 3D police, physics, physics, graphics, long range vision and much more. Full documentation included. Complex and fast.

### TEXAS PROGRAM BOOK

A program written especially for the unexpanded TI-994A, including 160 Micro Level Loader, Micro Basic, monitor, Compiler and many more.

Real version of P.D. in conjunction with Apple's VISA for cassette tape drives. Price and £20.00 for 16 disk version. Order ref: Orders over £50 post free.



APEX SOFTWARE  
Winton Court, N. Leamington Spa  
CV32 4EA  
Tel: 0527 57170



## ONE MAN'S VIEW

# Get it right, Sir Clive

Every two years or so that special time comes round again when, in classic Sinclair style — Sir Clive and his crew amongst their latest and greatest home computers.

Waiting for it is a pack of ungrappling and impatient computer freaks like me who will buy anything with the wonderfully angular Sinclair logo on the side.

Will the QL meet our expectations? Perhaps.

It certainly sounds good, but so do a lot of other things when we first read about them in the handily-written and fully illustrated computer papers. The reason here about a computer that nobody, including the writer, knows a lot about.

There are mysterious and conflicting reports of chip names, memory capacity and cost, and, finally, the official literature arrives. Happy would-be customers now open the envelopes and scratch their heads in confusion when they find, for example, that it costs £500 more than they had heard.

Plainly, that initial period is over for the QL and the initial fans have settled down to a basic lot. And a very good lot it is too. 128K RAM (96 usable after 32K for screen display of understand, eight colours, several text and graphics modes, two built-in Microdrives, lots of interfaces, a surprisingly excellent BASIC controlled by a Zilog Z80A of processor, an interesting shape and a low expense of programme.

And it's cheap. Or rather, for argument's sake, it's inexpensive. It is a lot less than it should be.

The catch? There doesn't appear to be one. But perhaps everyone is thinking in the wrong direction for the final answer. If anything does eventually go wrong it won't be the computer. Only on it will be the company.

For too long we have let it all go by with computer companies: the production problems, terrible software, re-delivery, the insults of mailing. If our friend Sir Clive is reading I hope he'll send his head in shame.

Please understand to say that I have had two 2328As and three of the 16K RAM packs for it. Finally sorted out after the third packed up. The first round I've only done myself proud, but stupider at 16K Spectrum. Oh no, I've had eight. No, this is not a typing error — I read right. I wonder how many QLs I'll get.

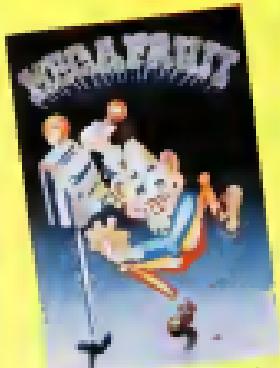
Now, regardless of one of my better virtues and I know that things like this must happen all the time. But I had better not happen again. I want to have faith in your company, Sir Clive, but you have let me down in the past. Your last chance will come soon when I order my QL. Be warned: there are others like me and it's a dangerous cult-like market.

Please get it right.

John Kirby  
Luton

If this space is for you to round off along the sides areas, to present comments, to start tributes, or just to share your opinions or experiences. Contributions from individuals must be to Paul Lipton, Editor, Home Computing Weekly, No 1 Golden Square, London W1B 3AB.

# NEW FROM THE GODS



#### ANSWER

stage from my late thinking  
Given the present circumstances, with all the  
features of the past American condition, such as  
poorer Negroes, less well off.



www.elsevier.com/locate/jmp

**Systematic Risk for Project Risks**  
Risk is a general term used to denote uncertainty. Project and program risk has both real and latent sources. Project risk can come from both internal and external sources. Project risk can be analyzed using the following approach:



www.elsevier.com/locate/ijar

www.elsevier.com/locate/jtul

20-Mile Rule by State Stamp.



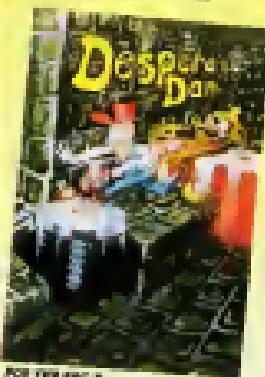
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pyramidal shape the height of the  
pyramids.



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See also *Shaw's biography*  
Shaw's ideas on human progress were greatly  
influenced by the English historian Thomas Babington  
Macaulay. Shaw is a very serious man, but  
by no means austere. One of the reasons for his  
popularity is the way in which he handles his  
material.

AVAILABLE FROM ALL GOOD COMPUTER STOCKISTS

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www.nature.com/scientificreports/ | (2022) 12:1030 | Article number: 1030

## COMPETITION

Silversoft is one of our longest established software houses — and its range of best-sellers proves it.

Now you have the chance to win a prize package of Silversoft games for your Spectrum or ZX81.

Each of our 40 games will receive software worth up to £10. That's £4000 worth for the Spectrum or more for the ZX81.

Your name will be entered into the Silversoft Register for John Adams Computer Store and Andromeda Computer, all free of charge.

all you have to do is to find the Silversoft logo on each word square.

If you're a winner with either model of the Spectrum your prize will be drawn from the lot.

**Entries**      **Grand Prize**  
Master      Cyber Rain  
Ghosts 'n' Goblins      Brain Damage  
Liberation      Armageddon  
Master Empathy

And if you have the 48K Spectrum these odds could be yours:

**Second Prize**      **Game Squads**  
From Hell      Rubber Skin

Winners with a 128K plus 56K RAM pack will each receive three of the following:

**Entries**      **Armageddon**  
Master      Alien Invasion

When the names are judged no distinction will be made between owners of either computer.

Names must be first sent to: *Postbox April 6*.

### How to enter

Enter the word square carefully and try to find all the Silversoft software titles all of them, plus more, are in the two lists above.

# Spectrum and ZX81 users: win great games from SILVER SOFT

You may enter as many times as you wish provided each entry is in the official format and word squares that in a reported difficulty Silversoft's answer cannot be overlooked.

Closing date is Friday April 8 at 11.59pm.

The names of the first 40 entries received in random, regardless of computer model, will win the prizes.

The prizes will arrive from Silversoft within 10 days of the publication of the list comprising the names of the winners and the relatives.

### The rules

The closing date is first past on Friday April 8, 1983 and the prizes will be allocated according to the lists in order of entry.

Names which do not follow the official format will not be considered. Prizes will be held for the first 40 entries. All Silversoft software titles, including Master and Alien Invasion & Alien Invasion II. This question also applies to software titles and rights of the computer's owner. Prizes and expenses will be taxed.

## Silversoft competition

### Entry Coupon

Name \_\_\_\_\_

Address \_\_\_\_\_

Post code \_\_\_\_\_

Number of titles found \_\_\_\_\_

Computer owned (Spectrum or ZX81, with memory) \_\_\_\_\_

Competing entries and rules — If you are a subscriber this will not be a secret. Post to: *Silversoft Competition, Home Computer World, 101-103 London Road, London SW18 4JL*. Closing date: Friday April 8. Prizes: £1000 (Spectrum) and £500 (ZX81). Prizes include software titles and hardware. Details enclosed.



There's £7,000-worth of tapes waiting for the winners. How many Silversoft titles can you find in our word square?

# Tiger distribution

## Your Best Source of Best Sellers



### We know what's selling

As a leading distributor of home computer software, we know what's selling in retail outlets. We've also got the knowledge and capability to best service and supply the requirements of quality computer shops nationwide.

All these products are available in shops supplied by Tiger Distribution.



John Menzies

spectrum

Tiger trader

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Tiger Distribution, Commercial House, 4 Victoria Road, Widnes, Cheshire, WA8 9QY



## Your Best Source of Best Sellers

# Collect the rubbish... and sounds you can make

100

You take on the role of chief garbage collector for the trashy, sprawling, *mess*.

The object is to fill the CPU of all the robots while at the same time avoiding the "program pulses" that are scattered all around you.

Again from the program notes, you also have to watch out for the slippery floor because if you start moving it is impossible to stop, except by clinging to the walls of the CCA.

The game requires a paycheck and visa on the suspended V-20.

www.nature.com/scientificreports/

More are now special effects which you might care to see in these other features.

We have put them all together into one demonstration program, which runs on the VIC-20 with 3K of RAM.

If you have a VME RAM pack, the following command entered in direct mode immediately after power up will set up the VME to RAM as a program designed for a VME or a VME plus 16.

POKEWEE, ROBERT,  
NEW  
POKEDAMM, 150  
POKEWAH, 240  
POKEWAH, 240

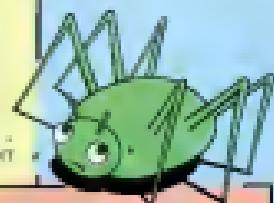
Clear the house and you are almost ready to go, only one last hurdle remains. The progress which you want to make here is a long one but you

## Родительский контроль

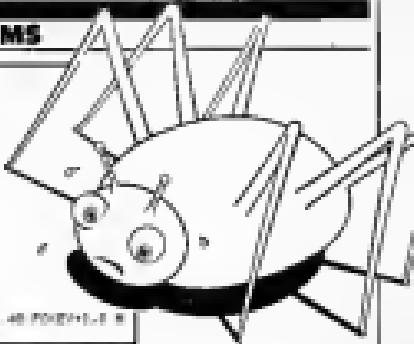
This key is used to locate the map of memory to protect some areas of RAM from being overwritten.

With a 16K RAM pack, if you used the above POKER, you don't need to leave the top of memory — as done the last from the program. Otherwise you will get an OUT OF MEMORY error if you run it in 8K.

• *Winning Games on the WBC-20, 1979*, is published by Ellis Horwood and distributed by John Wiley & Sons, 35 Chichester, A tape of all the programs in the book is £3.95 and book and tape together cost £11.95.



## **WIC-20 PROGRAMS**



```
1000 REM ****
1010 REM +
1020 REM +SOUND EFFECTS+
1030 REM + PROGRAMS +
1040 REM +
1050 REM ****
1060 REM---PHOTON ATTACK
1070 POKE398379, 15
1080 FOPEN=3 TO 20
1090 FORM=255T0255-INT/P
1100 POKE398476, F
1110 POKE398877, F
1120 NEXTI
1130 POKE398877, @
1140 NEXTL
1150 POKE398876, @
1160 POKE398878, @
1170 CLRF
1180 REM----UFO LANDING
1190 POKE34875, 15
```

```

1280 FORP=130T03696TEFC0
1290 PORT=1T0T#4
1290 FORP=1T0T3TEP-5
1290 INJ1 145THE1280
1290 FORP=36876-J
1290 HEATJ
1290 HEATT
1290 HEATF
1290 FORP=36876-0
1290 FORP=36876-0
1290 CLR
1310 PERI-----LONE UFO
1320 FORP=36879-15
1330 PORT=1T0T15TEP-1
1340 FORP=1T0T0T
1350 FORP=1T0J45
1360 FORP=36876-200+F
1370 FORP=36874-200-F
1380 HEATF
1390 NEXTJ

```

## VIC-20 PROGRAMS

```

1400 HEITT
1410 POKE36876-0
1420 POKE36874-0
1430 POKE36878-0
1440 CLP
1450 PFM-----SHILL
1460 R=8
1470 V=15
1480 POKE36878,V
1490 V=V-.75
1500 IP=0THEIN40
1510 FORT=234TO294STEP2
1520 R=R+1
1530 LPR=0THEIN=7-4-R=0
1540 POKE36876,T-14
1550 POKE36875,T
1560 HEITT
1570 POKE36876-0
1580 POKE36875-0
1590 IP=0THEIN1430
1600 POKE36878-0
1610 CLP
1620 PFM-----RED ALERT
1630 POKE36878-15
1640 FORT=1T020
1650 POKE36876-242
1660 POKE36875,161

```

```

1670 POKE36874-162
1680 FORL=1T0100
1690 HEITL
1700 POKE36876-0
1710 POKE36875-0
1720 POKE36874-0
1730 FORL=1T0100
1740 HEITL
1750 HEITT
1760 POKE36878-0

```

```

1760 POKE36878-0
1770 CLR
1780 PFM-----HELICOPTER
1790 POKE36878-15
1800 FORL=1T0250
1810 POKE36877-154
1820 POKE36874-130
1830 FORL=1T020
1840 HEITL
1850 POKE36874-0
1860 POKE36877-0
1870 HEITT
1880 POKE36877-0
1890 POKE36878-0
1900 CLR
1910 PFM-----FLINGER
1920 POKE36878-15
1930 FORL=1T0500
1940 POKE36876-131
1950 POKE36875-130
1960 POKE36874-130
1970 HEITT
1980 POKE36876-0
1990 POKE36875-0
2000 POKE36874-0
2010 POKE36878-0

```



```

1680 HEITL
1690 POKE36876-0
1700 POKE36875-0
1710 POKE36874-0
1720 POKE36878-0
1730 FORL=1T0100
1740 HEITL
1750 HEITT

```



Quark 3D is a 3D action adventure and beat 'em up and shoot 'em up game. It features 3D perspective, 3D raycasting, colour, horizontal movement, increasing difficulty with keyboard control, 3D floor movement, and an integrated sound system. Quark 3D requires 64K RAM.

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# ULTIMATE

A black and white photograph showing a large, scattered pile of metal hardware components. The pile includes various sizes of washers, nuts, and bolts, all appearing to be made of a reflective metal. The components are scattered across a light-colored, possibly wooden, surface. The lighting creates strong highlights and shadows on the metallic edges, emphasizing the texture and form of the hardware.

# THE NUT-SO- SOFTWARE

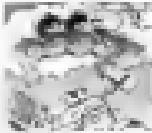
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### Final LMS Report



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Fed up with zapping aliens, A.C. Bird created A DAY at the Races for the Spectrum.



**much will you**

Want a day in the sun? Try my program and starting with \$10, you could win thousands of pounds... or you may be walking home.

I have tried to create something quite different from trapping aliens and escaping from spaces, both of which my readers have been about twice interested.

Anyway, the point is a non-value and reduce step not at the root.

**It has proved fairly addictive**

All the participants are in the groups

## Project capital

PRINT command  
should return and  
be entered in GRAPHICS  
mode.

100

CL, CL, CL lower lobes.  
also horizontal portions of  
lower  
and 1, and 2, and 3 middle  
cells.  
bottom your theory  
rate 1000 counts up to 8  
and middle counts  
but which leaves but no  
water how much water do lower  
3 lower lobes.



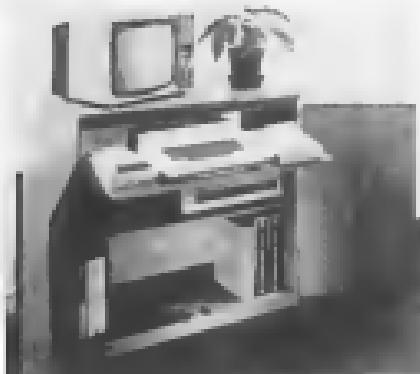
## **SPECTRUM PROGRAM**



— 10 —

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## LETTERS

### A question of copies

Dear Frosty, have you no idea if there's probably been this question a few times, but I'll be most grateful answer to reduce the price of my games?

Most good games, even around £20 with the best at around £15. How can you expect someone to pay such an amount for just one game?

It's a subject where the customer doesn't pay very high prices to the price of games. But why do people pay such a high cost of software?

It must be possible to sell all these good games in greater quantities with a smaller profit margin. After all, it only costs the software houses about 40p to produce one game. This includes development and production which does bring the price up to about £10.

Before I go on I hope you will have copies of games with a question. If the price of a game was reduced, would you buy the copied version or the original?

Yours sincerely, aged 12, Bradford

### It's horses for courses

I would like to point out to Mr. Fletcher (What we spend, BAACT, MW, 11) that although the programmes of modern languages are now standardised throughout the country a great deal, it is in fact a really interesting suggestion.

No single language — especially one like the integrated BASIC — could possibly cater for the specialised applications required of a.

Every language has its own good points and its own particular problems, from the low level but fast and very useful assembler to the most modest of the very high level and built-in facilities. Languages, general, like FORTRAN and the like, are in a class of their own, as are the special languages, like Pascal.

In writing efficiency and different, in different applications programs in BASIC, of all languages.

Each one has its own special applications in its own field of activity, regardless of whether it's for business and data processing, for example, or scientific and mathematical problem solving.

My writing is Simpson's BASIC application programs in Cobol as, conversely, a data processing program in Fortran.

Obviously, each language has a certain amount of flexibility. But for each

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appreciates the more efficient and appropriate language for the specific type of program required.

I would point out that the original proposed application for BAACT was in some high level language for beginners to learn about programming.

The application is now

based on the BASIC language, but I would

say that this is BAACT's

fault though BAACT is surely aiming only for its own, it would be a really inappropriate language to follow upon professional programmes as originally when BAACT first developed this as a major student option over such a wide range of microcomputer machines.

Many other languages are far closer between machines than BASIC.

C. E. G. T. B., Acton, London

### Magazines must act over piracy

Computer games software is the dynamic success story of the computer success industry and is in every home where PCs are played. Piracy has a simple but very compelling attraction.

The games software industry is a part of the emerging major technology industry and over time its place will be replaced as other areas of technology do their damage, given a chance.

The issue of games software has received attention both directly (as in piracy), through legislation and in the computer industry. As far as the computer industry is concerned it could become a major source of employments.

All that is being proposed by the authors, editors and members of the public who are against piracy, cannot be ignored. This is their right. We are not talking about libertarians

however, we are talking about "user groups" running local production houses at their evening meetings and resulting in many of 2000 copies of reproduced material sales to you all.

Computer software regard cannot object to such legitimate production as being a realistic overall part of the marketplace.

This is making the livelihoods of everyone in the industry, including the magazines. The press magnates have for less as spent on advertising costs and, if the production continue will have less and less to do with the reality of the situation.

The media is a powerful media yet in this culture a strong little is nothing to save their power. Some magazines still carry small advertisements for illegal copies. Some magazines have actually turned editorial in advancing the盗版. They are using all their means to save their legal.

The time has come for all computer magazines to tell their readers and advertisers to stop piracy. Piracy is not the only reason for the changes within hardware production. The copying, itself, must be stopped. Advertising revenues must flow and the power writers, editors and become supported.

It is no good continuing the software education to cover the problem they have got the responsibility of pointing it to the media that has their magazine that does not act as if facing up to reality.

David Lister, Mark Butler, Steve Tandy, Ian Hargreaves, Michael, Stephen, Lee, Peter, Liverpool

### Now record

I am writing with reference to Stephen Fletcher's letter (HCW, 4th April, Micro 4000, under Forum).

I have no idea over his word record for the 4000 that I have now record eight games.

J. McKeown, Stilo, Bradford, West Yorkshire

### Beaten him?

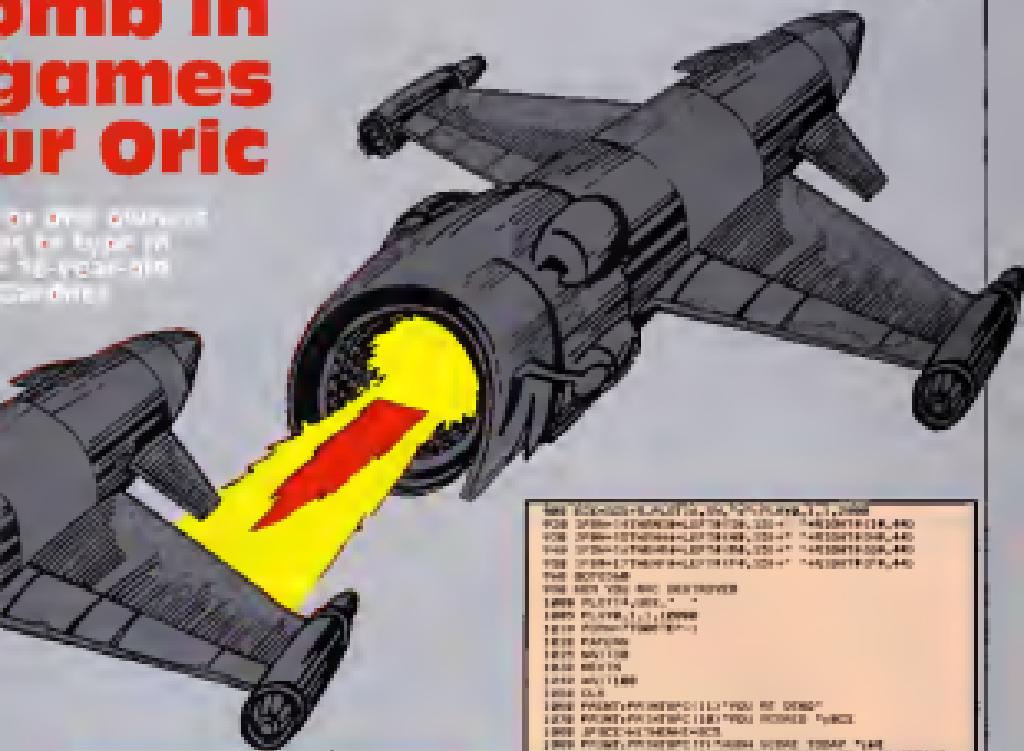
I am writing to see if anyone has got 100 per cent on the Spectrum version of The Matrix. My highest score is 91 per cent and if anyone has managed to go past that they could email me at MW1@virgin.com. Phil Mayle, Edinstown, Germany



## OBIC PROGRAMS

# battle omb in ames ur Oric

## ANSWER





## CBIE PROGRAMS

**Variation**  
• all level values  
• all data points  
• a measure of remaining from  
• all storage to display from  
• scores  
• graph scores  
• a vertical position of scores  
• approach values  
• total values — constant  
• speed  
• 40 more but  
• values

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# ANIROG

## Top Ten programs for the Commodore 64

1	Marco Minot	Software Projects (2)
2	Bugs Boo (The Flea)	Quicksilver (2)
3	Galaxy Jumper	Down (1)
4	Mr Whippy	Down (2)
5	Magewind	Microboard (2)
6	Robotpol	Mr House (1-1)
7	Munchin' Maniac	Mr House (10)
8	Falcon Patrol	Virgin (8)
9	Master Blaster	Ultimate (1-2)
10	Hunchback	Quack (1-1)

Compiled by *Welsman*. Figures in brackets are last week's positions

## Top Ten programs for the Dragon 32

1	Margolin' House	Mr House (10)
2	UGH!	Softbox (11)
3	SAS	Microdel (10)
4	Skyscrapper	Microdel (1-1)
5	Space Shuttle	Microdel (1-1)
6	Scorcher	Microdel (1-1)
7	Up Periscope	Microdel (1)
8	Dark Asteroid	Microdel (2)
9	Eight Ball	Microdel (1-1)
10	The King	Richard Sheldrick (1)

Compiled by *Welsman*. Figures in brackets are last week's positions

## Top Ten programs for the VIC-20

1	Computer Wars	Thorn EMI (10)
2	Wizard and the Princess	Mr. House (2)
3	Crazy Kong	Imagine (1-1)
4	Bawntech	Imagine (1-2)
5	Periscope	Softbox (10)
6	Grobanizer	Imagine (8)
7	M.I.B.A.T.E.T.	Imagine (2)
8	Archie's	Imagine (8)
9	Wacky Wakers	Imagine (8)
10	Jet Pac	Ultimate (10)

Compiled by *Welsman*. Figures in brackets are last week's positions

## BEST SELLERS

# Top 30

1	Marco Minot	Software Projects	Spectrum (11)
2	Munchback	Down	Spectrum (9)
3	3D Asteroid	Quicksilver	Spectrum (8)
4	Ali's Attax	Ultimate	Spectrum (8)
5	Munchback	Down	C64 (10)
6	The Potboiler	Mr. House	Spectrum (8)
7	Bear Brawler	Arte	Spectrum (22)
8	Lunar Journey	Ultimate	Spectrum (7)
9	Galaxy Jumper	Down	C64 (4) (27)
10	Chuckles Egg	A.B.F	Spectrum (11)
11	Bugs Boo (The Flea)	Quicksilver	Spectrum (23)
12	Sakimo Cadet	Down	Spectrum (8)
13	Frogger	Microdel	Dragon (18)
14	Smasher	Vision	VIC-20 (26)
15	The King	Microdel	Dragon (18)
16	Falcon Patrol	Virgin	C64 (4) (23)
17	Heeben	Mr. House	C64 (4) (23)
18	Jeff Bet Willie	Software Projects	Spectrum (1-1)
19	Chuckles Egg	Down	Spectrum (18)
20	Cuthbert in the Jungle	Microdel	Dragon (21)
21	Hunchback	Imagine	BBC (29)
22	Peda	Imagine	Dragon (28)
23	Zoom	Imagine	Spectrum (10)
24	Horror Attack	Darrell	Spectrum (4)
25	Penetrator	Mr. House	Spectrum (19)
26	Colossus Chess	CDS	C64 (4) (20)
27	Crazy Kong	Imagine	C64 (4) (24)
28	Quest!	Imagine	C64 (4) (23)
29	Arctech	Imagine	VIC-20 (23)
30	Crashman	New	Spectrum (1-1)

Compiled by PCS Distribution (0284 850270) from a sample of 40 dealers in the U.K. and Northern Ireland. Chart is for sales in the fortnight ended March 3.

## Top Ten programs for the ZX81

1	Flight Simulator	Software (11)
2	Chess 1K	Software (1-1)
3	Football Manager	Address (8)
4	Invaders	Quicksilver (2)
5	Defenders	Quicksilver (2)
6	Fantasy Games	Software (1-1)
7	Chess	Software (1-1)
8	Krisp' Land	PCB (4)
9	Hooper	Software (1-1)
10	ZX D.B.	Software (1-1)

Compiled by *Welsman*. Figures in brackets are last week's positions

## Top Ten programs for the Spectrum

1	Chuckles Egg	Falcon (7)
2	Ali's Attax	Ultimate (2)
3	Ali's Attax	Condor (8)
4	Golden Disk	Darrell (7)
5	Munchback	Down (1-1)
6	Lunar Journey	Ultimate (4)
7	Alchemy	Imagine (1-5)
8	Cyrus' B-Chess	Intelligence (2)
9	Magnon	PCB (1-1)
10	Superstar	Richard Sheldrick (1)

Compiled by W.H. Smith. Figures in brackets are last week's positions



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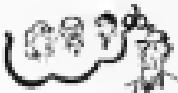
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6. Is he a quarter pounder?
7. A hole in one or one in a hole?
8. Where did the team go talk like that?
9. Has he gone off his Maltseas?
10. Who is it dummy?

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BOOK REVIEWS AND GAMES  
EDITOR: **ROBERT STREES** Editorial processing by  
SARAH COOPER, ROBERT COOPER, and  
ROBERT STREES

## EDUCATIONAL SOFTWARE REVIEWS

### Vocabulary VIC-20 + BK. 16K £9.99

Commodore, 475 Ayles Avenue, Buntingford, Herts

After doing my teaching practice, while working at my local High Street schools, since I left university, I used to set students a task of learning vocabulary words. I would have failed miserably. The set consists of two tapes, and contains books and a range of topics. On the first tape the programme asks you to identify the parts of the body, types of buildings etc.

A selected picture is shown to you and you have to answer the question 'What is this?' After this, one word at a time is removed and the tape is asked to identify it. A few wills you the

spelling is correct. At the end of each place a score is given along with a ranking list. The aim is to improve the child's vocabulary, improve spelling and increase confidence in reading.

With the aid of books, the overall quality of the programme is rather poor and slow. The graphics are crude and poor in general. A separate programme would have developed high resolution pictures to give a wide range of quality graphics. But for my money, I prefer the material available on colour machines.

Part of the Teach and Test Series for tape £10 to right £14.99

conversations  
10%  
use of the  
books  
10%  
value for money  
10%

★ ★

### Xograms 40K Spectrum £6.95

Programs, P.O. Box 2, Andover, Hants, SO9 5EW, Chelmsford CM2 8BY

Following a programme, you can work out up to five words of a picture, making up words out of individual letters. The chosen word is displayed in blue letters, with the possible letters on the right. Simple word shapes, or even word patterns, are the basis for solving the puzzles, giving two choices of shape. Given the word 'MILK', you can guess 'MILK' and there is a high score obtained. The three levels are found whilst solving, while or before solving. The display is uncluttered, with little visual reward for success.

Similarly, I chose one word at random level and failed

successively with a few letters until I got it. Finally, however, I solved the word 'MILK' with just JAM. Having thought several possible words, I finally tried place words in order. The programme goes back to all letters of all words attempted together.

My selected word 'spicy' and I failed the educational task. In a child, at the level of recognising JAM, capable of understanding the programme's task. The simple word patterns used for distinguishing, reading back and the word search task, can be bypassed. Children with memory difficulties might be helped, although

conversations  
10%  
use of the  
books  
10%  
value for money  
10%

★ ★ ★

# Learning with your computer

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### Nine Current Buns 40K Spectrum £9.99

Prog. Works Software, Avenue 32, Chelmsford CM2 8BY

An interesting way for the under 10s to learn the numbers 0 to 9, simple addition up to 10, and the concept of addition and subtraction. The programme uses a baker who makes a batch of nine current buns and then progressively uses one less to teach the numbers and then to use the child. There is plenty of encouragement of all that is learned.

Additional is simple using an enhanced tape tape and version

atmosphere showing how many are to be added. This provides an added incentive to play the game. A basic representation of the numbers is in the demonstration of procedures and logic to the

child. Children are given with the numbers and simple logic of the buns. The child can learn quickly, adequately to demonstrate at any session and because they are baked, you eat as you learn would reinforce the child's interest.

conversations  
10%  
use of the  
books  
10%  
value for money  
10%

★ ★ ★ ★

### French VIC-20 £12.95

Transys, 112 Cheshunt Road, Potters Bar, Herts EN6 3JL, Chelmsford CM2 8BY

If you know some French jargon then you will probably find this tape useful. You will, however, need a 40K Spectrum computer, and a keyboard. There are two tape sets, one for beginners, one for intermediate, one for advanced. The first is in my view the best. The second has, on which you are reading for facts, very understandable, and then back to the reader rapid for the programmed action.

By the end you should have accumulated a vocabulary of about 150 words and a grammar of 10 basic grammar. You will, of course, have to spend time reading your knowledge.

The learned word is the

French. Language lessons — a collection of French words in an easy to use set of cards. The first set of cards are based on the first 10 French characters in the first 100 characters of the tape.

It is obviously inappropriate to use a tape in a language lesson, and it would depend on the use of the tape, of the cards. The cards should repeat in children's words, and help reinforce and assist in helping the language.

Technically, the programme

is associated with the reader tape, and you probably need to be

programmed.

conversations  
10%  
use of the  
books  
10%  
value for money  
10%

★ ★ ★

### Arithmetic 2 VIC-20 + BK. 16K £9.99

Commodore, 475 Ayles Avenue, Buntingford, Herts

One major downside of this programme, the first teaching the numbers 0 to 20 by giving a number on the screen. The child, aged five or eight, has to use the keyboard to enter the number. If the number is correct, the machine shows the corresponding number of cars on the screen. The second programme has what has been learned by putting random numbers of objects on the screen for processing. After this, counting the machine starts with counting in pairs, then on and then using random numbers.

On the second tape, programme

three, and four start with multiplication and division. The last parts of these programs are in the form of games like the 100 Club, Count the Buses. My daughter, who has difficulties with numbers, asked where the world of 100s, multiplication, division, playing, Count the Buses — this made an advantage in arithmetic programming. The divisional program had the same answer.

Overall a useful but unoriginal package. Part of the Teach and Test Series

conversations  
10%  
use of the  
books  
10%  
value for money  
10%

★ ★ ★





# GLUE



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# GLUE



# GLUE



**CRL** Plumbs the depths

Now you too can join us this high-speed computer game, using the program for the Commodore 64.

The first point to note about the game is that it is for a bank teller, so you won't need Counter Money, Deposit Money, or any other add-ons.

**A POINT and REAPPOINT**  
command is being run. The  
program, and is designed to run  
in terminal mode, so you can  
see the different colored paths  
of the road you're on.

The second interesting feature of the game is that the keyboard can be used for both players at the same time. This is because one of the machine code interrupt routines, the keyboard in fact, allows two people to enter keys at the same time, so you don't need two controllers to play.

Lighter is in that enough — five moves per turn) — to make it fun to play, and has some extra features.

When the game is normally set, you have a resolution of 160 by 160 to play on, but this can be adjusted in steps of eight by changing resolution X and Y. For example, if X=8, a resolution will be 128 by 160.

### Final discussion

If you are not going to write machine code, you must have a high resolution screen with **STPRINT** and **READ** commands, and a way to split the keyboard in two or more panes. If these conditions hold true, you will be able to use your computer, a VME module, and it will be possible to convert this game.

These programs would allow the much slower, e.g. these 1000-2000 schools to be replaced by a program where parents nominate.

Finally, India should, notwithstanding the legislative position in an election of course, should be obliged to truly remove Jammu and

ANSWER

As your lightbox burns no fuel randomly within this area, it is best not to let the residence fall below 40% by 20%, otherwise

you will be able to play outside the playing area.

# On your Lightbike for a bout of high- speed combat

Two players both use the keyboard in Lightbiker, a fast-moving game for the Commodore 64, by HCW regular David Rees. And there are a few other novel features too.



An year lightning bars no be set randomly within this area. It a best not to let the lightning fall below #10 to 20, otherwise one of the bars may be placed outside the playing area.

How it works  
8-90 on plane variables and  
speed up the game  
90-100 on colors  
100-110 slow high resolution  
images  
110-120 on high resolution  
colors and display  
120-130 on screen memory usage  
130-140  
140-150 Anti-alias lines  
150-160 more colors  
160-170 movement speed increas-  
ing  
170-180 PORTAL machine code  
180-190 machine code DATA,  
190-200 and of game files do  
you think another game  
200-210 display lines and  
colors etc.

To use the gauge, RUM it. There will be a delay to measure each DATA is FORCED in. The more you will use and data displayed as the high resolution screen is cleared.

Then the grid edges are drawn and the game starts in progress. After it is finished, a point is added to the score of the player who won, and you can play another game.

Note: As usual, Commerce's EDMS control characters are suppressed in RISMs in the last above. These EDMS should not be typed.

**Main Variables**  
**X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>, X<sub>4</sub>, X<sub>5</sub>, X<sub>6</sub>** position  
 variables for magnetite node  
**P, Q** location of direction  
 regulars  
**G** game number  
**R<sub>1</sub>, R<sub>2</sub>** reaction code position rate  
 positions  
**Y** sum of nodes step  
**XX** subtracted from grid width  
 X width  
**YY** subtracted from grid width  
 Y width  
**COL100** players (1,0) column  
**ROW100** sum of the project  
**COL1-100**, ROW1-100 players position  
 variables for players 1

СВИМОВСКИЕ ИЗ ПРОСВЕТЫ

```

1440 DTRTR288,5,-169,3,-24,-144,-6,288,9
1450 DTRTR288,5,-169,3,-24,-144,-6,288,128
1460 DTRTR141,-2,-228,-321,-159,-255,-169,-255
1470 DTRTR141,-2,-228,-169,-197,-289,-64,-288,-1
1480 DTRTR000,-281,-48,-288,-5,-169,-1,288
1490 DTRTR144,-24,-201,-53,-299,-5,-169,-2
1500 DTRTR000,-284,19,-289,-49,-288,-5,-169,-3
1510 DTRTR24,-144,-6,-281,-54,-288,-5,-169,-4
1520 DTRTR141,-1,-124,-26,-1
1530 REM----- OF CIRLES
2000 FDTHT030982 NEXT
2010 FDTHT030982 DTRTR NEXT
2020 LHM=2000+1
2030 FOREV=17,PEEK(0H17)AH3223
2040 FOREV=24,23
2050 FOREV=22,PEEK(0H22)AH3222
2060 RTR(0H18)AH3223,1495,0H18,,AH3223
2070 RTR(0H18)DFT
2080 PRINT"CENTRE OF 2000*2000 PLAYER NOT"
2090 PRINT"HELL DONE"
2100 REM2000
2110 PRINT"NOH GO HELLHIT"
2120 PRINT"THE SCORES ARE "
2130 PRINT"TH1C1D" "2010"
2140 PRINT"TH1C1D" "2010"
2150 RTR(0H18)DFT
2160 PRINT"NOH"
2170 PRINT"DO YOU WANT ANOTHER GAME CIRHOP?"
2180 GTHM(JP84)=VTHM18
2190 IFJP84="VTHM18" THEN2210
2200 IFJP84="TH1C1D" THEN2200
2210 JP84=C1H1THM2200
2220 FOREV=225,23
2230 END
2240 REMHOP (INSTRUCTIONS)
2250 REMA(CLICL, RHEI),,(JMH)
2260 PRINT"JMHVS R"
2270 RTR(0H18)DFT
2280 PRINT"LEFT PLAYER "
2290 PRINT"1 UP1 & LEFT1 RIGHT1 DOWN1"
2300 PRINT
2310 RTR(0H18)DFT
2320 PRINT"RHEI VS R"
2330 PRINT"RIGHT1 PLAYER "
2340 PRINT"1, UP1 & LEFT1 + RIGHT1= DOWN1"
2350 PRINT
2360 JP84=REBEM SIZE 10,1
2370 PRINT"2000*2000," RTR(0H18)
2380 PRINT"TH1C1D"
2390 PRINT"12,3-WH180, " UP1
2400 RETURN

```



# Treasure awaits those who risk evil in the labyrinth

How it works

1-141 *introduction of users, programs, variables*

15-229 *introduction and review*

230-240 *absolute positioning*

240-242 *paint screen colors*

243-246 *introduction to graphics*

247-250 *calculator (2000-2050) on screen display*

254 *calculator (2040-2042) for addition, subtraction*

255-256 *calculator for multiplication*

257-258 *calculator for division*

259-260 *play, pause, and placement of mouse cursor*

261 *clock for date*

262-265 *clock, calendar, and other math calculations are used*

266-268 *clock (T) for day was set and if on go to next module, otherwise leave room and continue*

269-270 *leave room and there was*

270-272 *failure screen*

273-275 *class participation*

276-278 *use stylized graphics*

is the lily of gold — and the  
rest of dark green — where  
negatives meet the anxiety —  
right out of 1962.

In *Horizon*, short for *Henson* and *Montana*, you take the role of one of these characters: wizard, warrior, priest or thief.

Any combination of people may play the characters. For example, one person could play all four or two people per character could play.

You will meet up to 10 different types of miners and oil field, oil well and oilfield equipment men. Instead, All you have to do is find the gold and receive payment.

For those not familiar with this type of game there is a substantial introduction in the book.

When RUMI comes will be a short pause when graphics and transitions are set up.

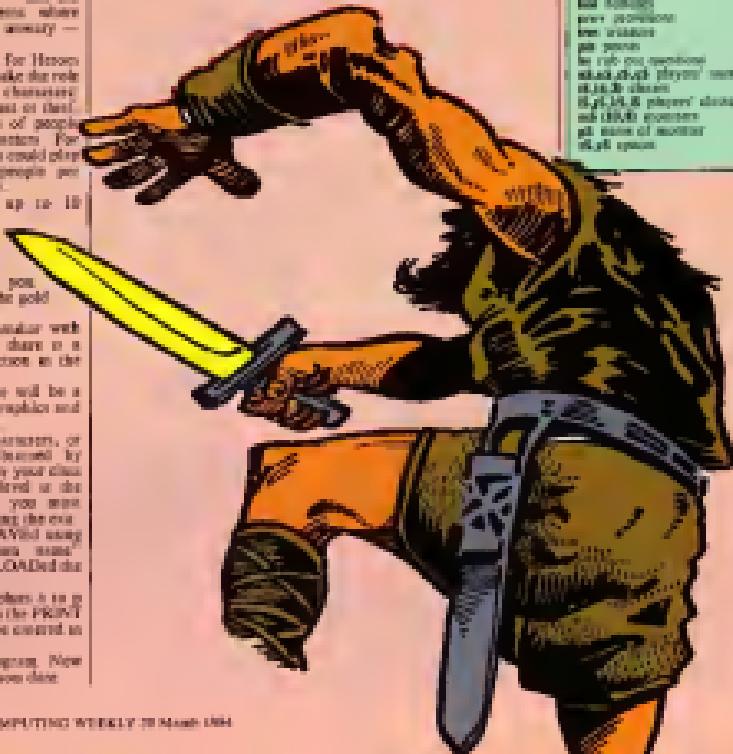
Details of the characters, or classes, can be obtained by pressing key 3. Note your class is 1, which shall stand as the number of racers you may employ before closing the ex-

If the name is SAVEd using the form, "program name" LBL 1 then when LOADED that game will auto-run.

User defined graphics & text generated by BASIC in the PLOT/TEXT mode should be entered in the GRAPHICS mode.

So what's the program? Play it up to you if you like.

Are you brave enough to explore the dark labyrinth where monsters lurk and a treasure chest of gold lies. Only the fittest will survive this devilish adventure, written for the 48K Spectrum by Tim Frost and Simon Welbourne



**Variables**  
1. **player** class of the player  
2. **player** player's name  
3. **score**  
4. **player** player's total score  
5. **level** level of play  
6. **decide** whether there is a  
    winner in the game  
7. **decide** an **answer**  
8. **answer** is not at  
9. **decide** preference  
10. **change**  
    changes the score replace  
    method  
11. **total** current  
    value of all player's spells  
12. **recent** recent  
    new answers  
13. **preference**  
    new answers  
14. **score**  
    new score  
15. **ask** you questions  
16. **player** player's name  
17. **class** class  
18. **player** player's choice  
19. **score** current  
20. **name** name of answer  
21. **option**

SPECTRUM FREQUENCIES

1. The first step in the process of creating a new product is to identify the target market. This involves research into consumer needs, preferences, and behaviors. It is important to understand the target market in order to create a product that will appeal to them. This step is crucial in determining the success of the product.

2. Once the target market is identified, the next step is to develop a product concept. This involves creating a unique value proposition that sets the product apart from its competitors. The product concept should be based on the needs and wants of the target market. It is important to have a clear understanding of the product concept in order to create a successful product.

3. The third step is to design the product. This involves creating a physical or digital representation of the product. The design should be functional, aesthetically pleasing, and easy to use. It is important to consider the target market's needs and preferences when designing the product.

4. The fourth step is to prototype the product. This involves creating a physical or digital model of the product. The prototype should be tested to ensure that it meets the requirements of the target market. It is important to have a clear understanding of the product's performance and functionality.

5. The fifth step is to manufacture the product. This involves creating the physical product in large quantities. It is important to have a reliable supplier and a efficient manufacturing process. The manufacturing process should be cost-effective and efficient.

6. The sixth step is to market the product. This involves creating a marketing plan to promote the product. The marketing plan should be based on the target market's needs and preferences. It is important to have a clear understanding of the product's features and benefits.

7. The seventh step is to distribute the product. This involves getting the product to the target market. It is important to have a reliable distributor and a efficient distribution process. The distribution process should be cost-effective and efficient.

8. The eighth step is to sell the product. This involves selling the product to the target market. It is important to have a clear understanding of the product's features and benefits. It is also important to have a good sales team and a effective sales strategy.

9. The ninth step is to provide customer support. This involves providing support to the target market. It is important to have a reliable customer support team and a effective customer support strategy. The customer support team should be able to answer questions and resolve problems.

10. The tenth step is to evaluate the product. This involves evaluating the product's performance and functionality. It is important to have a clear understanding of the product's performance and functionality. It is also important to have a good evaluation team and a effective evaluation strategy.

## **SPECTRUM PROGRAM**

## SPECTRUM PROGRAM

## U.S. SCENE

# Critics cool on CBM 264

*I suspect you might have heard by now that Jack Tramiel, company founder and president of Commodore, has resigned from the company. Commodore is still sailing under the name. Within four weeks of Tramiel's departure, four other high-level Commodore executives also resigned.*

*Although the four newest Commodore executives, the 264 and 364, were slated for an April delivery date, it seems apparent that the high-level shake-up may cause that date to be postponed. Some industry observers feel that without high-level management well-versed in the computer industry, Commodore may be left without a clear-cut marketing plan for the rest of this year.*

*Despite this, it is unlikely that the company will feel any pressure to retool or restructure at the workplace. After all, the Commodore 64, with its under-\$200 price tag alone, has all but eliminated competition in the home and hobby computer market. Since the 64 is selling so well, there can readily afford to hold back the market introduction of the two new machines.*

*Another prime reason for Commodore to delay the new computers is the extensive and rapid acceptance given the machines by some industry analysts and certain key members of the computer press when it was learned that another machine was software-compatible with the 64.*

*Such a move looks bad to the number of the computing press, who have been a source of a better 64 or Commodore in the last 12 months or so.*



*New York Times update. A while back I wrote about the new television show being aired on our Public Broadcasting Network which allows viewers to use their computer and modem to communicate with the producer of the show.*

*The show, *How To Talk Back To Your TV*, is now in its second year of the show. Using *The Source*, an American computer bulletin board available for subscription, viewers can contact the show via The New York Times Online service.*

*The weekly preview preview of coming shows, addresses and phone numbers for computers whose producers were shown, *Artefact*'s own generated column, *Books* available at discount, information on obtaining subscriptions of the show, other special offers, and, above all, the chance for viewers to request their favorite show. *New show's added!* Back.*



*It is about time? Who knew? According to the prestigious Stanford Research Institute (SRI), the computer market growth of personal computers is expected to slow down and stabilize at a rate of about 3 to 4 per cent annually within the next two years. SRI has spent about \$400,000 on their *Artefact* project.*

*Part of the results predict that within two years more than half of all personal computers sold will be microcomputers for office machines. The firm also predicts that businesses will not be buying so many personal computers when word-processor, terminal, and modems can be put into integrated systems.*

*The last prediction seems odd to me. Will things have gone just easily in five years? I thought one of the reasons that personal could were purchased by business people was that they eliminated the need to depend on one central computer and sharing facility.*

*Oh, well. People like to re-invent the wheel don't they? It's not you or me who's to blame. Let you know what happened.*

*I'll also see you next week and let you know what is happening.*

**Bob Levy**  
Fairfield, California









MCWman, my six-level maze game, runs on my Atari without any patches.

As you would expect, you guide MCWman with your joystick around a maze full of dots.

You must try to clear the maze of dots without being gobblified up to one of the ghosts which are in pursuit of you throughout the game.

Each time you get caught by a ghost you lose one of your three lives.

The dots are worth 10 points each, and note that the ghosts eat them too!

Positioned in each corner of the maze are power pills. If you eat one of these you gain three lives.

#### What is required:

The program is a C64PACER 1.1.16, a text mode which displays the screen into 20 by 20. The characters are rendered in black and white.

ATARI 400 needs the joystick.

Load 13000 to 14000 from the tape using DATA, then execute.

PLAY places a single character at position 1,1, on the screen and LOCATE moves its position to 1,1, from the last position printed.

POSITION puts the cursor at the specified place on the screen.

LOCATE positions the cursor at the specified place on the screen and reads the content under it.

#### How it works:

I have put in a lot of REMarks to guide you through the program.

• 25 scores dots will be added to the Power dots indicator (PT) at the bottom of the screen.

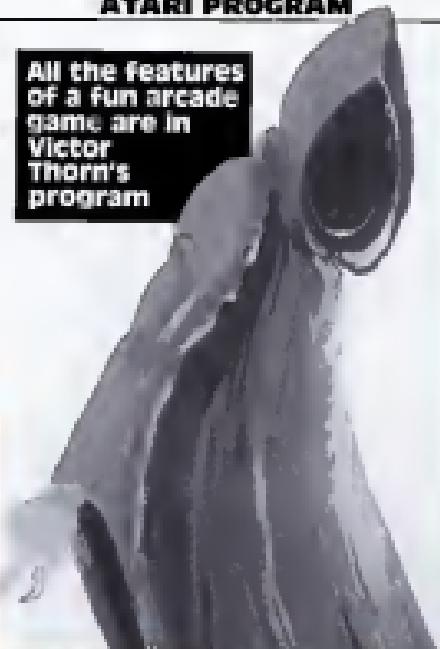
• The ghosts will move.

• You can eat the ghosts for a single 400 points each and the PT indicator reaches zero.

The power pills are also worth 20 points each.

Each time you clear the maze

All the features of a fun arcade game are in  
Victor Thorn's program



Variables  
C64 puts characters to or from screen  
C64 moving address of cursor, cursor in  
C64 moving address of each character level in C64  
High 16 bits, vertical position of each plane  
12 lines rendering  
12 lines  
12 lines, level rendering  
A.E. MCWman's horizontal, vertical position  
12 lines displaying pixel  
12 lines LOCATE variable  
12 levels — there are 20 when the maze is full  
I used 1000-10000 loops as information — 1-PERF (100), which checks for pressed key  
T used in FOR-NEXT loops and also with INPUT and VGT when T equals 1, 1, or 3  
8 dimensions have many places and in areas  
C64, set or C64 — EP (speed)  
Telltale movie photo  
C64 value of a line number of line position of screen, we right then C64 would be the first number which means 20. When right  
12 input areas  
12 lines, level rendering of  
12 lines (10 points)  
12 levels (10 areas)

of it does the shift level will increase by one.

There are six skill levels, each selectable from the keyboard at the beginning of each game. 1 is easiest, 6 is hardest. These are the differences:

skill level	No. of ghosts	ghost speed
1	1	slow
2	2	slow
3	3	slow
4	4	fast
5	5	fast
6	6	fast

If your score is among the 10 best you can earn your name — up to 20 letters — in the Top 10.

When entering this program I would advise you to leave out all the REMs as it runs considerably faster without them.

# Gobble the dots and avoid the ghosts...

## ATARI PROGRAM



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